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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,845	01/26/2006	Takaaki Kishigami	L9289.06109	7753

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EXAMINER
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ZEWDU, MELESS NMN

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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06/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,845	<b>Applicant(s)</b> KISHIGAMI ET AL.	
	<b>Examiner</b> Meless N. Zewdu	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 2-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/26/06; 2/28/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

1. This action is the first on the merit of the instant application.
2. Claims 1-31 are pending in this action.

### ***Information Disclosure Statement***

The information disclosure statement filed 1/26/06 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instance, instead of particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention,

claims 29 and 30 incorporates the features of other claims by reference. It is also to be noted that claims 29 and 30 are considered as independent claims by virtue of their configuration.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampath et al. (Sampath) (US 6,922,445 B1) in view of Miyata et al. (Miyata) (US 2004/0022205 A1).

**As per claim 1:** Sampath discloses a radio communication apparatus that carries out radio transmission by applying a multi-carrier scheme to space multiplexing transmission (see figs. 1 and 2; col. 14, lines 54-61), comprising:

adaptive space multiplexing transmission (see abstract) for each divided band (sub-carrier) obtained by dividing a communication band of multi-carrier transmission and to which a plurality of sub-carrier signals belong (see col. 3, lines 60-67; col. 7, lines 62-67; col. 14, line 54col. 15, line 7); and

a setting section (see adaptive modulation/coding) that sets a transmission format used to carry out radio transmission (see col. 3, lines 14-67). But, Sampath does not explicitly teach about a detection section that detects adaptability to space

multiplexing, as claimed by applicant. However, in the same field of endeavor, Miyata teaches about a base station that judges whether each slot (channel) is in a suitable condition for space division multiplexing (see paragraph 0009). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Sampath with that of Miyata for the advantage of preventing interference by prohibiting space division multiplexing in a time slot (channel) judged unsuitable while permitting space division multiplexing in a time slot (channel) judged suitable (see paragraph 0009).

**As per claim 1:** Paulraj discloses a radio communication apparatus that carries out radio transmission by applying a multi-carrier scheme to space multiplexing transmission (see fig. 2; abstract), comprising:

a detection (see fig. 3, element 62) section that detects (receives) adaptability to space multiplexing transmission for each divided band obtained by dividing a communication band of multi-carrier transmission and to which a plurality of sub-carrier signals belong (see col. 6, lines 25-59; col. 12, lines 25-35; claim 1). It is to be noted that OFDM signals are narrow band sub-carrier signals which are produced by dividing a communication band of a multi-carrier transmission.

a setting section (see adaptive modulation/coding) that sets a transmission format used to carry out radio transmission based on the adaptability detected for said each band (see fig. 3; col. 7, lines 20-40).

**As per claim 29:** Paulraj discloses a base station apparatus comprising the radio communication apparatus according to claim 1 (see figs. 1- 3; col. 3, lines 43-67; col. 5, lines 45-58). Note: in fig. 2 for instance, element 12 is a BS and element 14 is a MS.

**As per claim 30:** Paulraj discloses a mobile station apparatus comprising the radio communication apparatus according to claim 1 (see figs. 1- 3; col. 3, lines 43-67; col. 5, lines 45-58). Note: in fig. 2 for instance, element 12 is a BS and element 14 is a MS.

**As per claim 31:** the features of claim 31 are similar to the features of claim 1, except claim 31 is directed to a method comprising steps that are intended to guide the apparatus of claim 1 to perform its intended function. Thus, if or since the apparatus of claim 1 is disclosed, the method of claim 31 must be an inherent feature. Therefore, claim 31 is rejected on the same ground as claim 1.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/  
Primary Examiner, Art Unit 2617  
6/25/2008